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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,612	08/28/2003	Yoshitsugu Kato	1035 -466	5283

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EXAMINER

PRETLOW, DEMETRIUS R

ART UNIT	PAPER NUMBER
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2863

DATE MAILED: 01/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/649,612

Applicant(s)

KATO ET AL.

Examiner

Demetrius R. Pretlow

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(Handwritten signature)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/12/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 5-8 and 12 is/are rejected.
- 7) ☒ Claim(s) 2-4, 9-11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claim 2,3,9,10 objected to because of the following informalities:

In reference to claim 3, line 7 . "CR" needs to be defined.

In claims 2, 9 and 10, the examiner can not ascertain as to what would be a "slight voltage fluctuation" .

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,5,6,7,8,12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kozlowski et al. (2003/0184307) Kozlowski et al. teach a load applying section for applying a current to a battery. Note paragraph 86, lines 9-13. Kozlowski et al. teach a measuring section measuring input output characteristics of the battery in response to the applied load. Note paragraph,63, line 8, paragraph 65, lines 1-5. Kozlowski et al. teach said battery state diagnosing applies the load to the battery as a current load. Note paragraph 86, lines 9-13. Kozlowski et al. teach a diagnosing section diagnosing a state of the battery by applying a result of the measurement to a mathematical

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expression obtained by a system identification method. Note paragraph 42, lines 1-8 and paragraph 57, lines 1-7.

In reference to claim 5, Kozlowski et al. teach the limitations above, Kozlowski et al. does not explicitly teach load applying section applies current to the battery when the battery is not supplied with fuel. However this limitation would be deemed inherent to the charging of batteries. Note paragraph 86, lines 11-14.

In reference to claim 6, Kozlowski et al. does not explicitly teach a circuit section for constituting a closed circuit by serially connecting the battery to a current load when diagnosing the battery, however this is deemed inherent to the charging of the battery in which the charging data is used to diagnose the battery. Note paragraph 42, lines 4-8. Kozlowski et al. teach a measuring section, connected to the circuit section, for measuring a terminal voltage of the battery and current flowing in the circuit section. Note paragraph 34, lines 1-6. Kozlowski et al. teach a diagnosing section diagnosing by the system identification method, a state of the battery based on a result of the measurement by the measuring section. Note paragraph 42, lines 1-8 and paragraph 57, lines 1-7.

In reference to claim 7, Kozlowski et al. does not explicitly teach a circuit section for constituting a closed circuit by serially connecting the battery to a voltage source when diagnosing the battery, however this is deemed inherent to the charging of the battery in which the charging data is used to diagnose the battery. Note paragraph 86, line 9-11 and paragraph 42, lines 4-8. Kozlowski et al. teach a measuring section, connected to the circuit section, for measuring a terminal voltage of the battery and

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current flowing in the circuit section. Note paragraph 34, lines 1-6. Kozlowski et al. teach a diagnosing section diagnosing by the system identification method, a state of the battery based on a result of the measurement by the measuring section. Note paragraph 42, lines 1-8 and paragraph 57, lines 1-7.

In reference to claim 8, Kozlowski et al. teach applying a load to a battery, Note paragraph 86, lines 9-13. Kozlowski teach measuring input and output characteristics of the battery in response to the applied load. Note paragraph,63, line 8, paragraph 65, lines 1-5. Kozlowski al. teach diagnosing a state of the battery by applying a result of the measurement to a mathematical expression obtained by a system identification method. Note paragraph 42, lines 1-8 and paragraph 57, lines 1-7. Kozlowski et al does not explicitly teach applying a load to the battery serially connects the battery to a current load, however this is deemed inherent to the charging of the battery in which the charging data is used to diagnose the battery. Note paragraph 42, lines 4-8.

In reference to claim 12, Kozlowski et al. teach applying a current to a batter. . Note paragraph,86, lines 9-13. Kozlowski et al. teach measuring input output characteristics of the battery in response to the applied current load. Note paragraph,63, line 8, paragraph 65, lines 1-5. Kozlowski et al. diagnosing a state of the battery by applying a result of the measurement to a mathematical expression obtained by a system identification method. Note paragraph 42, lines 1-8 and paragraph 57, lines 1-7. Kozlowski et al. does not explicitly teach the current is applied to the battery when the battery is not supplied with fuel. However this limitation would be deemed inherent to the charging of batteries. Note paragraph 86, lines11-14. Kozlowski et al. does not

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explicitly teach applying a current serially connects the battery to a voltage source, however it is inherent to the charging of the battery in which the charging data is used to diagnose the battery. Note paragraph 42, lines 4-8.

Allowable Subject Matter

Claim 2-4,9-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In reference to claim 2 the prior art of record does not teach the inclusion of the limitations of an the measured output characteristic is a terminal voltage of the battery; and when diagnosing the battery by system identification, an electromotive force component of a fluctuating terminal voltage of the battery is removed as a bias. It is these limitations found in each of the claims, as they are **claimed in the combination**, that has not been found, taught or suggested by the prior art of record.

In reference to claims 3-4 the prior art of record does not teach the inclusion of the limitations of an the measured output characteristic is a terminal voltage of the battery; and when diagnosing the battery by system identification, a fluctuating terminal voltage of the battery is separated into a perpendicular component which derives from a serial resistance of the battery, and a component representing CR dynamics. It is these limitations found in each of the claims, as they are **claimed in the combination**, that has not been found, taught or suggested by the prior art of record.

In reference to claim 9 the prior art of record does not teach the inclusion of the limitations of an the measured output characteristic is a terminal voltage of the battery;

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and when diagnosing the battery by system identification, an electromotive force component of a fluctuating terminal voltage of the battery is removed as a bias, and a slight voltage fluctuation after the electromotive force component has been removed is amplified and used for the diagnosis by the system identification. It is these limitations found in each of the claims, as they are **claimed in the combination**, that has not been found, taught or suggested by the prior art of record.

In reference to claims 10-11 the prior art of record does not teach the inclusion of the limitations of an the measured output characteristic is a terminal voltage of the battery; and when diagnosing the battery by system identification, a fluctuating terminal voltage of the battery is separated into a perpendicular component which derives from a serial resistance of the battery, and a component representing CR dynamics; the perpendicular component is removed from the terminal voltage', and a slight voltage fluctuation after the perpendicular component has been removed is amplified and used for the diagnosis by the system identification. It is these limitations found in each of the claims, as they are **claimed in the combination**, that has not been found, taught or suggested by the prior art of record.

Response to Arguments

Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection. Applicant argues that the previous cited art did not teach the load to the battery being a current load. Kozlowski et al. teach a load applying section for applying a current to a battery. Note paragraph 86, lines 9-13. Note rejection above,

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Demetrius R. Pretlow whose telephone number is (571) 272-2278. The examiner can normally be reached on Mon.-Fri. 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Demetrius R. Pretlow

Demetrius R. Pretlow 1/10/06

Patent Examiner

BRYAN BUI
PRIMARY EXAMINER

Bryan Bui